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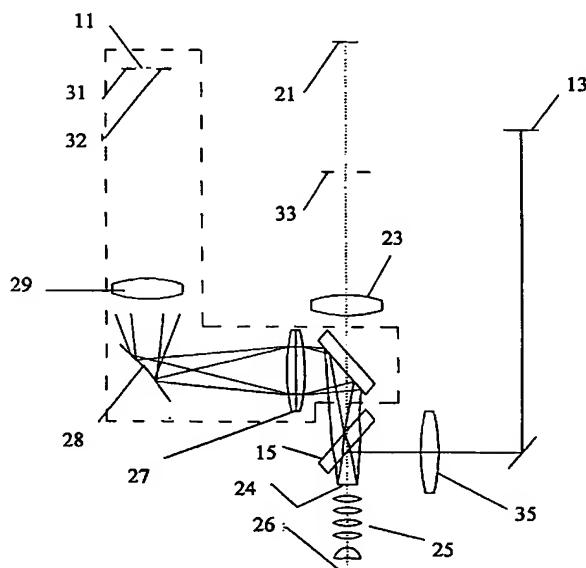
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(54) Title: FOCUSING SYSTEM AND METHOD



(57) Abstract: A method of automatically focusing a microscope having a light source, an objective lens or lens system, a means to direct incident light through the objective lens or lens system to be reflected by the object, an aperture to limit the spatial extent of the incident light and serve as an illumination pupil, a means to direct at least some of the reflected light to an imaging system, and an imaging system to image the reflected light so directed is described. In accordance with the invention a beam of light is directed from a light source through an objective of the microscope system to an object whereby light is reflected from the surface thereof; reflected light is collected and directed to an imaging system, wherein the incident beam of light is limited in spatial extent by imaging an aperture to form an illumination pupil, the centroid of illumination of the illumination pupil is aligned with the incident optical axis of the instrument, and reflected light is projected to the imaging system comprising at least one pair of images from eccentric sections of an imaging pupil displaced from the optical axis in opposite directions, and wherein the separation of the images thereby produced is determined to provide an indication of the object distance. A focusing system implementing the method and a microscope fitted with such a system are also described.

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